

What is Claimed is:

- [c1] An apparatus comprising:
- a chamber adapted for holding a workpiece having a surface layer adapted for being etched; and
 - a distribution plate including a first plurality of channels for providing a first fluid to flow into the chamber at an angle $\hat{1}_1$ with respect to an exposed surface of the distribution plate and a second plurality of channels for providing a second fluid to flow into the chamber at an angle $\hat{1}_2$ with respect to the exposed surface of the distribution plate; wherein the first plurality of channels and the second plurality of channels are arranged in rings around a common point of the distribution plate.
- [c2] The apparatus of claim 1, wherein each angle $\hat{1}_1$ and $\hat{1}_2$ is at least 45 degrees and less than 90 degrees.
- [c3] The apparatus of claim 2, wherein paths of the first plurality of channels and paths of the second plurality of channels originate in an XY plane of the distribution plate and wherein each angle $\hat{1}_1$ and $\hat{1}_2$ is at least 45 degrees and less than 90 degrees with respect to the XY plane and wherein each angle $\hat{1}_1$ is offset from the XY plane at an offset angle $\hat{1}^{\pm}_1$ and $\hat{1}^2_1$ with respect to the XY plane, and wherein each angle $\hat{1}_2$ is offset from the XY plane at an offset angle $\hat{1}^{\pm}_2$ and $\hat{1}^2_2$ with respect to the XY plane, and wherein $\hat{1}^{\pm}_1$, $\hat{1}^2_1$, $\hat{1}^{\pm}_2$, and $\hat{1}^2_2$ are selected from the group consisting of from about 0 to -45 and from about 0 to +45 degrees with respect to the XY plane.
- [c4] The apparatus of claim 1, wherein the distribution plate comprises a material selected from the group consisting of polytetrafluoroethylene, fluorinated ethylene propylene, acetal homopolymer resin, polyimide, polyetherimide, polyarylate, polycarbonate, and combinations thereof.
- [c5] The apparatus of claim 1, wherein the rings of the first and second types are concentric rings, wherein each ring has a diameter from about 1.75 inches to about 7.04 inches.
- [c6] The apparatus of claim 1, wherein the paths of the fluids through the